STATE OF MICHIGAN
IN THE MICHIGAN SUPREME COURT

PEOPLE OF THE STATE OF MICHIGAN
Respondent-Appellee,

Supreme Court No. 149479
Court of Appeals No. 318303
Circuit Court No. 2011-003642-FC

v

LEO D. ACKLEY,
Petitioner-Appellant

BRIEF OF *AMICUS CURIAE* THE INNOCENCE NETWORK

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INTEREST OF *AMICUS CURIAE*

Amicus curiae the Innocence Network has a professional interest in this Court's consideration of the issues involved in this case, in particular in clarifying trial counsel's duty to investigate the availability of expert testimony in a case that turns on a questionable scientific hypothesis.

The Innocence Network is an affiliation of organizations dedicated to redressing the causes of wrongful convictions and providing pro bono legal and investigative services to individuals seeking to prove their innocence of crimes for which they have been convicted. The Innocence Network is currently comprised of 84 organizations, who represent clients in all 50 states, the District of Columbia and Puerto Rico, as well as Argentina, Australia, Canada, France, Ireland, Israel, Italy, The Netherlands, New Zealand, South Africa, and the United Kingdom.

The Innocence Network and its members are dedicated to improving the accuracy and reliability of the criminal justice system to prevent future wrongful convictions. The Network recognizes that ineffective assistance and faulty forensic testimony have been contributing factors in many wrongful convictions. Accordingly, this case implicates the Network's interest in ensuring that defendants charged with crimes based on questionable forensic science receive the effective assistance of counsel, thereby decreasing the chance they will be wrongfully convicted.

INTRODUCTION

As reversals of wrongful convictions resting on the Shaken Baby Syndrome/Abusive

Head Trauma ("SBS/AHT") hypothesis[1] mount and compelling new evidence has emerged, legal scholars, physicians and scientists—including the very doctor who initially proposed the SBS hypothesis—have expressed grave concerns about the integrity of convictions such as Leo Ackley's. There is no question that faulty expert testimony creates a risk of wrongful conviction. The U.S. Supreme Court has explicitly recognized this reality, and defense counsel's role in preventing it:

> Prosecution experts, of course, can sometimes make mistakes. Indeed, we have recognized the threat to fair criminal trials posed by the potential for incompetent or fraudulent prosecution forensics experts, noting that serious deficiencies have been found in the forensic evidence used in criminal trials . . . *This threat is minimized when the defense retains a competent expert to counter the testimony of the prosecution's expert witnesses* . . .

Hinton v Alabama, 134 S Ct 1081, 1090; 188 L Ed 2d 1 (2014)(internal citations and quotations omitted; emphasis added).

This Court has asked the parties to address, "whether the defendant was denied the effective assistance of counsel based on trial counsel's failure to adequately investigate the possibility of obtaining expert testimony in support of the defense." *People v Ackley*, 497 Mich 910; 856 NW2d 75 (2014). To answer that question, this Court must decide whether trial counsel's representation fell below an objective standard of reasonableness, and

[1] "Shaken Baby Syndrome" is a term with which many are familiar. It is not, however, the only term used to describe medical findings like those in this case. Other terms include "Shaken Impact Syndrome," "non-accidental trauma," "inflicted neurotrauma," and "blunt force trauma," to name only a few. "Abusive Head Trauma" is the American Academy of Pediatrics' preferred term. (*See, e.g*. Christian et al, Abusive Head Trauma in Infants and Children, 123 Pediatrics 1409 (2009)). As legal challenges arose, and biomechanical study revealed that shaking is an unlikely mechanism of the classic SBS findings, supporters thought it best to simply change the name. (*See, e.g*., American Academy of Pediatrics, *Abusive Head Trauma: A New Name for Shaken Baby Syndrome,* available at <http://www.aap.org/en-us/about-the-aap/aap-press-room/pages/Abusive-Head-Trauma-A-New-Name-for-Shaken-Baby-Syndrome.aspx> (accessed January 26, 2015)). In this document, we will refer to the hypothesis as Shaken Baby Syndrome/Abusive Head Trauma (SBS/AHT).

whether Mr. Ackley suffered prejudice as a result. *Strickland v Washington*, 466 US 668, 669; 104 S Ct 2052; 80 L Ed 2d 674 (1984). Analyzing these two questions in the context of this case requires an examination of the inadequate scientific basis for the SBS/AHT hypothesis.

SBS/AHT prosecutions are particularly fraught with dubious evidence and the potential for wrongful conviction of innocent parents and caregivers. As discussed below, there are numerous examples that prove this point. Trial counsel plays a central role in preventing more cases from becoming similar examples. And, a critical aspect of counsel's role in these cases of contested science is the investigation and presentation of expert testimony to provide a defense. Accordingly, *Amicus Curie* the Innocence Network ("the Network") asks this Court to grant Appellant's application for leave to appeal to make clear that a robust investigation is constitutionally required in a case such as this.

ARGUMENT

The underlying facts of this case are simple and are summarized briefly here only to provide context to the arguments below. The state alleged that the Ackley killed his girlfriend's three-year-old daughter either by blunt force trauma or shaking, and that her medical findings could not have been the result of an accidental fall. *People v Ackley*, No 318303, 2014 WL 1618356, at *1, 5 (Mich Ct App April 22, 2014).

Trial counsel's defense was that the child died from an accidental fall off of a bed, not abuse. *Id.* at 1-2. After obtaining $1,500 from the court to retain an expert witness in support of his defense, counsel consulted with Dr. Brian Hunter, a pathologist. *Id.* at 2. Dr. Hunter testified that he told counsel there was a disagreement in the medical community about whether short falls could have caused Baylee's injuries, but in his opinion, a fall was

not a possible cause of the injuries. *Id.* Specifically, Dr. Hunter testified that he told counsel "you don't want me as your defense expert." Evid. Hr. 8/8/13 at 15. However, he referred counsel to at least one other expert, whom he described as "the best defense expert in these types of situations." *Id.* at 10. Counsel testified that Dr. Hunter referred him to two experts, neither of whom he ever contacted. *Ackley*, *supra* at 4.

After Mr. Ackley's conviction, one of those experts, Dr. Werner Spitz, reviewed the case and determined that Baylee's head injuries "were the product of an accident . . . [and] that the child's death could not be attributed to shaken baby syndrome or any type of abusive head trauma." *Ackley, supra* at 3. He also opined that the bruises on the Baylee's body were not the product of abuse. *Id.* On these facts, the trial court found that trial counsel performed deficiently in failing to contact either of the experts he was referred to, and that Ackley was prejudiced as a result. *Id*. While acknowledging that Dr. Spitz's opinion directly contradicted the state's theory, the Court of Appeals reversed, finding that counsel's "decision not to consult a second expert constituted trial strategy." *Id.* at 4.

This case does not exist in a vacuum. It should be considered in the context of the dangers of faulty forensic testimony, the need for counsel to investigate and adequately counterbalance this testimony, and the risk of wrongful conviction when counsel fails. More specifically, this case exists against the background of the considerable questions regarding the validity of the SBS/AHT hypothesis itself, a hypothesis that the state's experts relied on in this case. In a prosecution relying on this questionable science, competent defense counsel must present the considerable science that undermines it. Any other rule is contrary to both *Strickland* and the goal of preventing wrongful convictions.

I. Prosecutions That Rest Almost Entirely Upon Disputed and Untested Scientific

or Medical Hypotheses, Such as the SBS/AHT hypothesis, Pose a Serious Risk of Wrongful Conviction.

Unvalidated or improper forensic science is the second greatest contributor to wrongful convictions that have been overturned with DNA testing, playing a role in nearly 50% of those cases.[2] An analysis of the first 200 DNA exoneration cases, which included examining the scientific testimony in every one of the 137 cases in which trial testimony of forensic analysts could be located, revealed that in 60% of the cases, "forensic analysts called by the prosecution provided invalid testimony at trial—that is, testimony with conclusions misstating empirical data or wholly unsupported by empirical data."[3] *See also, Hinton, supra* at 1090 (citing this same study in recognizing the problem of faulty forensic testimony).

The danger from invalid scientific testimony is at its highest in cases where the prosecution relies almost entirely on expert opinions to establish proof of a crime and identity of the perpetrator. This is a particular problem in cases alleging unwitnessed child abuse, most notably those that depend upon the SBS/AHT hypothesis.[4] In such cases, a hypothesis—a deeply problematic, vigorously disputed, and indisputably untested hypothesis[5]—is relied upon to satisfy every element of the charged offense, in the absence

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[2] *See* The Innocence Project, *DNA Exonerations Nationwide*, available at <http://www.innocenceproject.org/Content/ DNA_Exonerations_Nationwide.php> (accessed Jan. 11, 2015).

[3] Garrett & Neufeld, *Invalid Forensic Science Testimony and Wrongful Convictions*, 95 Va. L. Rev. 1, 1 (2009).

[4] *See* Tuerkheimer, *Science-Dependent Prosecution and the Problem of Epistemic Contingency: A Study of Shaken Baby Syndrome*, 62 Ala. L Rev. 513 (2011).

[5] A massive body of research literature—some 8,000 medical and scientific articles in all—has been generated on the issue of SBS/AHT, but even strong supporters of the SBS/AHT hypothesis acknowledge that, because of difficulties studying the effects of abuse on children, the scientific basis remains largely untested. *See*, *e.g.,* Reece et al., *Inflicted*

of corroboration or proof from other evidence. First, medical opinion relies upon the hypothesis to establish the *cause and manner* of the child's death or condition (the hypothesis in its classic form posits that the observed medical condition could only be caused by abuse). Second, medical opinion relies upon the hypothesis to establish *identity* of the perpetrator by positing that, because the child would have collapsed immediately upon infliction of the abuse, the last person with the child had to be the abuser. And finally, medical opinion relies upon the hypothesis to establish the requisite *state of mind* by positing that the injuries could not have been produced accidentally, but rather only through application of such massive force that the abuser had to have acted intentionally.[6]

But the SBS/AHT hypothesis cannot bear that weight, on any of the elements of these prosecutions, either in its original formulation or as refined by emerging medical research.[7] The research base for SBS/AHT is marred by myriad design flaws, including perhaps most notably a problem of circularity—the very signs or conditions being studied for their diagnostic value are used to categorize the cases under study as either abuse or non-abuse; that is to say, the researchers assume the very conclusion they are studying.[8]

All commentators and researchers in this field—including the most ardent

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Childhood Neurotrauma: Proceedings of a conference sponsored by Dep't of Health and Hum. Servs., Nat. Inst. Of Health, Nat. Inst. of Child Health and Hum. Dev., Off. of Rare Disease, and Nat. Center for Med. Rehabilitation Res., Am. Acad. of Pediatrics (2003).

[6] *See* Findley et al., *Examining Shaken Baby Syndrome Convictions in Light of New Medical Scientific Research,* 37 Okla. City U. L. Rev. 219, 223 (2012); Tuerkheimer, *supra* n. 4.

[7] *See* Tuerkheimer, *The Next Innocence Project: Shaken Baby Syndrome and the Criminal Courts,* 87 Wash. U. L. Rev. 1 (2009); Findley et al., *Shaken Baby Syndrome, Abusive Head Trauma, and Actual Innocence: Getting It Right,* 12 Hous. J. Health L. & Pol'y 209 (2012); Findley, *Examining Shaken Baby Syndrome, supra* n. 6; Imwinkelried, *Shaken Baby Syndrome: A Genuine Battle of the Scientific (and Non-Scientific) Experts*, 46 Crim. L. Bull. 156 (2010).

[8] *See* Findley, *Getting It Right, supra* n. 7 at 274; Tuerkheimer, *The Next Innocence Project*, *supra* n. 7 at 13.

supporters of the SBS/AHT hypothesis—acknowledge that circularity plagues the research, and that it is very difficult to conduct high-quality, unbiased research because it is impossible to conduct randomized, controlled studies of the effects of shaking on babies.[9] While the challenges to conducting high-quality research highlight the deficiencies in the research base, they cannot excuse criminal convictions based wholly or largely on low-quality, methodologically questionable research.

In the absence of solid research, advocates of the classic hypothesis call instead for reliance on the clinical judgment of examining physicians.[10] But as the Supreme Court has made clear, the mere *ipse dixit* of a group of purported experts cannot suffice to establish reliable scientific evidence absent a solid research foundation. *Kumho Tire Co v Carmichael*, 526 US 137, 157; 119 S Ct 1167; 143 L Ed 2d 238 (1999) *quoting General Electric Co v Joiner*, 522 US 136; 118 S Ct 512 (1997); Risinger, *Defining the "Task at Hand": Non-Science Forensic Science after* Kumho Tire Co. v. Carmichael, 57 Wash. & Lee L. Rev. 767, 775-76 (2000); *see also Berk* v. *St. Vincent's Hosp & Med Ctr*, 380 F. Supp. 2d 334, 354 (SDNY 2005) ("An anecdotal account of one expert's experience, however extensive or impressive the numbers it encompasses, does not by itself equate to a methodology, let alone one generally accepted by the relevant professional community.").

Unchallenged opinion testimony, which forms the basis for a criminal prosecution in this realm, is rife with the risk of human error. Clinicians, generally and specifically in SBS/AHT cases, make diagnostic errors as a result of incomplete information or confirmation bias. A thorough review of the scientific literature found that cognitive errors

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[9] *See* Narang, *A Daubert Analysis of Abusive Head Trauma/Shaken Baby Syndrome*, 11 Hous. J. Health Law and Pol'y 505, 529-532 (2011); Findley, *Getting It Right*, *supra* n. 7 at 236.
[10] Narang, *A Daubert Analysis*, *supra* n. 9.

often reflect the failure to collect complete data on a particular patient's condition.[11] The American Academy of Pediatrics' position paper on SBS/AHT reminds the physician of his or her responsibility to consider alternative causes when SBS/AHT is suspected and to make an SBS/AHT diagnosis only after considering all the clinical data.[12] This exhortation to consider possible alternative causes before a diagnosis is not always heeded, as the record in this case demonstrates. Likewise, confirmation bias (the tendency to seek out data that confirms one's original idea, rather than considering disconfirming data), is also a source of error in medical diagnoses.[13] Where the research base is thin and the operative hypothesis is untested, the risk of diagnostic error is inevitably amplified. If a physician believes he or she is right, that doctor will put greater weight upon any confirmatory information.[14] Those risks are manifest in cases such as these, where unmet expert testimony leads to conviction.

II. The SBS/AHT Hypothesis, and its Specific Application in This Case, is Not Supported by Contemporary Scientific and Medical Research.

Subdural hematoma, retinal hemorrhage and encephalopathy—the classic "triad"—

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[11] Berner & Graber, *Overconfidence as a Cause of Diagnostic Error in Medicine,* 121 Am. J. Med. (5 Suppl.) S2, S7 (May 2008).
[12] Christian, Block, and the Comm. on Child Abuse and Neglect, *Abusive Head Trauma in Infants and Children*, 123 Am. Acad. of Pediatrics 1409, 1410 (2009).
[13] Berner & Graber, *supra* n. 11 at S8. Confirmation bias has been studied as a source of error in even the most venerated forensic science disciplines. For example, contextual information about a particular crime predisposes analysts to make an erroneous identification within the relatively objective area of DNA analysis. Dror & Hampikian, *Subjectivity and Bias in Forensic DNA Mixture Interpretation*, 51 Sci. and Just. 204, 205 (2011).
[14] Pines, *Profiles in Patient Safety: Confirmation Bias in Emergency Medicine,* 13 Acad. Emerg. Med. 90, 92 (2006).

are the medical findings commonly attributed to SBS/AHT, although not all findings are represented in all cases. The child in this case had each of these injuries, and the state's experts relied on these findings in their diagnoses of shaking and/or intentional impact. *See* Prosecution's Brief in Opposition to Defendant's Application at 17-19, 21-25 (summarizing the findings and testimony of the prosecution's experts).[15]

Subdural hematoma is bleeding between layers of tissue that cover the brain. In the original SBS hypothesis, it was thought that subdural hematoma was caused by rupture of bridging veins.[16] We now know that traumatic bridging vein rupture is an unlikely cause for the subdural hematomas often seen in alleged SBS/AHT cases.[17]

Retinal hemorrhage is bleeding into the tissue at the back of the eye. The original hypothesis was that retinal hemorrhage was caused by rupture of veins in the eyes.[18] It is now known that retinal hemorrhage has a wide variety of causes.[19]

Encephalopathy (dysfunction of the brain) or sometimes simply cerebral edema (brain swelling), makes up the third part of the triad. The original hypothesis was that encephalopathy was due to tearing of axons (nerve fibers in the brain).[20] Studies have shown, however, that the damage previously thought to be traumatic in nature is actually

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[15] The testimony of Dr. Michelle Haley provides a clear example of the state's reliance on the "triad." She testified, "the constellation of findings that she had, the subdural hematoma, the retinal hemorrhages and then she had a very global injury to her brain from not enough oxygen or blood flow . . . is consistent with a shaking injury." TT at 610; Prosecution's Brief in Opposition to Application for Leave at 18.

[16] Case et al., *Position Paper on Fatal Abusive Head Injuries in Infants and Young Children*, 22 Am. J. Forensic Med. & Pathology 112 (2001).

[17] Squier & Mack, *The Neuropathology of Infant Subdural Haemorrhage*, 187 Forensic Sci. Int'l 6 (2009).

[18] Case, *Position Paper, supra* n. 16 at 116.

[19] Narang, *A Daubert Analysis, supra* n. 9 at 628.

[20] Case, *Position Paper, supra* n. 16 at 117-18.

caused by hypoxia/ischemia (a shortage of adequate oxygen).[21] In short, every element of the original SBS/AHT hypothesis has now been undermined by advancements in scientific knowledge.

A. Subdural hemorrhage, retinal hemorrhage, and encephalopathy have a wide variety of causes unrelated to trauma or abuse.

1. Subdural hematoma is not pathognomonic of abuse

While it was once believed that subdural hematoma was caused by trauma, it is now known that subdural hematoma is a non-specific medical finding with a wide variety of differential diagnoses, which include: accidental trauma, birth trauma, metabolic disease, nutritional deficiencies, genetic syndromes, clotting disorders, tumors, stroke and infection.[22] Subdural hematomas are well known to occur in falls.[23]

2. Retinal hemorrhage is likewise not pathognomonic of abuse.

Retinal hemorrhage is similarly anything but the "smoking gun" that it was asserted to be in this case. Dr. Guertin testified that diffuse retinal hemorrhages are diagnostic of abuse: "abusive head injury causes diffuse retinal hemorrhages and this child had diffuse retinal hemorrhages." TT at 440. Dr. DeJong testified that it is "extraordinarily rare" to see retinal hemorrhages in anything but "inflicted trauma." TT at 669. Dr. Halley testified the

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[21] Geddes, *Neuropathology of Inflicted Head Injury in Children, I. Patterns of Brain Damage*, 124 Brain 1290 (2001).

[22] Hymel et al., *Intracranial Hemorrhage and Rebleeding in Suspected Victims of Abusive Head Trauma: Addressing the Forensic Controversies,* 7 Child Maltreatment 329, 333-337 (2002); *see also* Narang, *A Daubert Analysis, supra* n. 9 at 627.

[23] *See, e.g.*, Hall et al., *The Mortality of Childhood Falls*, 29 J. Trauma 1273 (1989); Lantz & Couture, *Fatal acute intracranial injury, subdural hematoma, and retinal hemorrhages caused by stairway fall*, 56 J. of Forensic Sci. 1648 (2011), Kim et al., *Analysis of Pediatric Head Injury from Falls*, 8 Neurosurgery Focus e3 (2000), Plunkett, *Fatal Pediatric Head Injuries Caused by Short-Distance Falls*, 22 Am. J. of Forens. Med. and Path. 1 (2001); Steinbok et al., *Early hypodensity on computed tomographic scan of the brain in an accidental pediatric head injury*, 60 Neurosurgery 689 (2007).

retinal hemorrhages were caused by shaking. TT at 618; Prosecution's Brief in Opposition to Defendant's Application at 18.

However, there is no scientific basis for contending that retinal hemorrhages (or a particular type or pattern of retinal hemorrhages) are reliably diagnostic of abuse.[24] In fact, very little is known about the mechanism of retinal hemorrhage in infants. *See, e.g.,* Emerson et al., *Ocular Autopsy and Histopathologic Features of Child abuse,* 114 Am. Acad. Ophthalmology 1384, 1394 (2007) (given the current lack of knowledge, "much of what we think we know about the systemic and ocular findings of child abuse will continue to be the result of speculation rather than based on sound evidence."). Because retinal hemorrhages sometimes occur when a person has had a major trauma, experts testifying for the prosecution often suggest that major trauma is required to cause retinal hemorrhages. But this is incorrect; fatal falls with retinal hemorrhage also can and do occur accidentally and from short distances.[25]

Retinal hemorrhage is also commonly associated with accidental trauma, metabolic disease, nutritional deficiencies, genetic syndromes, tumors, stroke, infection, vasculitis, hypoxia, hypotension, hypertension and increased intracranial pressure.[26] Retinal hemorrhage, as Dr. Guertin noted, has also been associated with cardiopulmonary

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[24] *See, e.g.,* Lantz & Couture, *supra* n. 23. Lantz et al., *Perimacular Retinal Folds from Childhood Head Trauma,* 328 Brit. Med. J. 754, 755-56 (2004) ("Statements in the medical literature that perimacular retinal folds are diagnostic of shaken baby syndrome are not supported by objective scientific evidence."); *accord,* Leuder et al., *Perimacular Retinal Folds Simulating Nonaccidental Injury in an Infant,* 124 Archives Ophthalmology 1782 (2006).

[25] *See, e.g.,* Plunkett, *Fatal Pediatric Head Injuries Caused by Short-Distance Falls,* 22 Am. J. Forensic Med. Pathology 1 (2001); Lantz & Couture, *supra* n. 23.

[26] Narang, *A Daubert Analysis of Abusive Head Trauma/Shaken Baby Syndrome*, 11 Hous. J. Health L. & Pol'y 505, (2011).

resuscitation (CPR) and advanced life support.[27] Likewise, retinal hemorrhage has been associated with infections such as pneumonia.[28]

3. Encephalopathy and cerebral edema are ubiquitous responses to brain insult, and therefore are not at all diagnostic of abuse.

The final element of the triad—encephalopathy (brain dysfunction) or cerebral edema (brain swelling)—is indisputably and universally known to be caused by any sort of insult to the brain, and in fact is defined as "any degenerative disease of the brain."[29] Injury or swelling itself therefore adds little to the diagnosis of abuse, and could be caused just as well—indeed, more typically—by any sort of disease or accidental trauma.

Experts testifying for the prosecution often discuss how subdural hematoma, retinal hemorrhage and cerebral edema have been noted in children with a history of major trauma, such as falls from great heights or automobile accidents—implying or saying outright that major trauma is required to cause them. But this is a flawed conclusion; fatal falls with these findings also occur accidentally and from short distances. This kind of oversimplification ignores the myriad etiologies of these diverse findings and chooses instead to focus only on one, for which there is often no credible, direct evidence. It is akin to insisting that all broken bones must be the result of a car accident because car accidents have been known to cause broken bones, and if a patient has a broken bone and reports no history of a car accident, the patient is lying.

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[27] Goetting & Sowa*, Retinal Hemorrhage After Cardiopulmonary Resuscitation in Children: An Etiologic Reevaluation*, 85 Pediatrics 585 (1990); Matsches, *Retinal and Optic Nerve Sheath Hemorrhages Are Not Pathognomonic of Abusive Head Injury,* 16 Proc. of the Am. Acad. Forensic Sci. 272, 272 (2010); Cummings et al., Atlas of Forensic Histopathology 177 (2011).

[28] Lopez et al., *Severe Retinal Hemorrhages in Infants with Aggressive, Fatal Streptococcus Pneumonia Meningitis*, 14 J. Am. Ass'n. Pediatric Ophthalogy Strabismus 97 (2010).

[29] *Dorland's Medical Dictionary* at 590 (29th Ed. 2000).

B. The testimony that a short fall could not have caused the injuries in this case was outdated and disfavored at the time of trial.

All of the state's experts testified that a short fall could not have caused Baylee's injuries. *Ackley, supra* at 5. However, the opinion that short falls cannot cause the type of injuries sustained by Baylee in this case was outdated and disfavored at the time of trial.

In 2001, the American Academy of Pediatrics (AAP) published a position statement informing their members that pediatricians should presume abuse when a child younger than one year old has intracranial injury (such as subdural hematoma, retinal hemorrhage, and cerebral edema).[30] The AAP's position in 2001 was that, "the constellation of these injuries does not occur with short falls."[31] By 2009, however, the AAP revised this official position in accordance with developing medical research. The AAP acknowledged the possibility that injuries like Baylee's can be caused by accidental falls, stating that "controversy is fueled because the mechanisms and resultant injuries of **accidental and abusive** head injury overlap."[32] The AAP removed the language from its official position regarding the impossibility of the constellation of injuries resulting from a short fall and the presumption of abuse when a young child presents with intracranial injuries.[33]

As another example, in 2001 the National Association of Medical Examiners (NAME) published a paper in which the author argued that subdural hemorrhages, retinal hemorrhages and brain swelling were caused by "acceleration/deceleration", which the author appeared to view as a proxy for shaking. This paper **did not pass peer review** at

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[30] *See* American Academy of Pediatrics, Committee on Child Abuse and Neglect, *Shaken Baby Syndrome: Rotational Cranial Injuries-Technical Report*, 108 Pediatrics 206 (2001).
[31] *Id.*
[32] Christian et al, *Abusive Head Trauma in Infants and Children*, 123 Pediatrics 1409 (2009) (emphasis added).
[33] *Id*.

the time of its publication, did not receive approval as a NAME position paper, and was officially withdrawn in 2006, never to reappear.

Just recently, a court in New York rejected the very contention made by the prosecution's experts in this case. *People v. Bailey*, Case No. 2001-0490 (Monroe County Ct., NY, Dec. 16, 2014), attached as Appendix A. In *Bailey*, a toddler fell from an 18" chair, suffered devastating brain injuries, and later died. At trial, the prosecution claimed that the described short fall would not account for the findings which included brain swelling (edema), a brain contusion and extensive retinal hemorrhages. At a three-week evidentiary hearing, experts from both sides agreed that short falls *can* cause fatal injuries. *See Bailey*, at 24. Experts on both sides agreed that the testimony given at the trial that short falls cannot kill was **false**. *See Bailey*, at 12. The post-conviction court agreed with the witnesses that "even falls of just a few feet generate levels of force and velocity that exceed known thresholds for brain injury." *Bailey*, at 9, 22.

While experts may disagree about whether a particular case is the result of an accident or not, no one can dispute that falls (even those from short distances, or those that initially do not appear devastating) **can** be fatal. Further, current research shows that short falls can and sometimes do cause injuries like Baylee's; medical literature includes published accounts of many such cases.[34]

[34] *See, e.g.*, Hall et al., *The Mortality of Childhood Falls*, 29 J. Trauma 1273 (1989); Lantz & Couture, *supra* n. 23; Kim et al., *Analysis of Pediatric Head Injury, supra* n. 23, Plunkett, *Fatal Pediatric Head Injuries, supra* n. 23; Steinbok, P. et al., *Early hypodensity on computed tomographic scan of the brain in an accidental pediatric head injury*, 60 Neurosurgery 689 (2007).

III. Inadequate Defense Representation Contributes to Wrongful Convictions, Especially When Questioned Forensic Evidence is not Rigorously Tested.

Poor lawyering is a major cause of wrongful conviction; one study identifies it in almost 25-percent of DNA exonerations.[35] A study of 53 exonerations in New York identified inadequate defense counsel as a primary factor contributing to wrongful convictions, "usually a failure to fully investigate or to offer alternative theories and/or suspects."[36] It is no secret that Michigan in particular has been plagued with problems of inadequate defense representation. In signing legislation in 2013 to create a new oversight body, the Michigan Indigent Defense Commission, Governor Rick Snyder said:

> We're solving a problem that we've had in Michigan for far too long . . . This is about one's constitutional rights to have competent legal counsel. Everyone deserves it. Everyone deserves appropriate justice. In Michigan, we've had quality problems in the past in terms of inconsistencies by jurisdiction and by different courts, and it was time to solve that problem.[37]

The danger of wrongful convictions due to ineffective assistance of counsel makes this Court's intervention in this case all the more necessary. In particular, this Court should clarify that the Constitution requires counsel to conduct adequate investigations into potentially exculpatory *evidence*, particularly where the state's theory is subject to attack on so many levels. *See supra*, section II, *infra* section IV (discussing the many scientific flaws in the SBS/AHT hypothesis and the state's theory in this case).

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[35] Garrett, *Innocence, Harmless Error, and Federal Wrongful Conviction Law*, 2005 Wisc. L. Rev. 35, 75 (2005).

[36] New York State Bar, *Final Report of the New York State Bar Association's Taskforce on Wrongful Convictions*, 6, available at <https://www.nysba.org/WorkArea/DownloadAsset.aspx?id=26663> (accessed January 22, 2015).

[37] Oosting, *Michigan Gov. Rick Snyder signs indigent defense overhaul: 'This is about constitutional rights'*, MLive, available at <http://www.mlive.com/politics/index.ssf/2013/07/michigan_gov_rick_snyder_signs_4.html> (accessed January 22, 2015).

A. Failure to investigate a viable, scientific defense is not a strategic decision, instead it is conduct that can lead to wrongful convictions.

The Court of Appeals found "defense counsel's performance in this case did not fall below an objective standard or reasonableness because his decision not to consult a second expert constituted trial strategy." *Ackley, supra* at 5. This is a misapplication of *Strickland* and its progeny.

The Sixth Amendment imposes on counsel a duty to investigate, because reasonably effective assistance must be based on professional decisions and informed legal choices can be made only **after** investigation of options. *Strickland*, *supra* at 680. While "trial strategy" may foreclose some ineffective assistance of counsel claims, "the label 'strategy' is not a blanket justification for conduct which otherwise amounts to ineffective assistance of counsel." *Lovett v Foltz*, 884 F2d 579 (CA 6 1989). "To make a reasoned judgment about whether evidence is worth presenting, one must know what it says . . . A lawyer cannot make a protected strategic decision without investigating the potential bases for it." *Couch v Booker*, 632 F3d 241 (CA 6 2011). The review of counsel's investigation is one of objective reasonableness at the time of trial. *Strickland*, *supra* at 689. A purportedly strategic decision is not objectively reasonable **"when the attorney has failed to investigate his options and make a reasonable choice between them."** *Towns v Smith*, 395 F3d 251, 258 (CA 6 2005)(internal citations and quotations omitted).[38] This is especially true when defense counsel knows what evidence the prosecution will rely on, such as forensic science or a theory founded on such science.

In *Wiggins v Smith*, the Supreme Court found counsel's performance deficient because "counsel **chose to abandon their investigation at an unreasonable juncture**,

making a fully informed decision with respect to sentencing strategy impossible." *Wiggins v Smith*, 539 US 510, 527-28; 123 S Ct 2527; 156 L Ed 2d 471 (2003). Thus, the question in this case is whether counsel chose to abandon his investigation at "an unreasonable juncture." *See id*. Here, the juncture is the point at which Dr. Hunter told counsel, "you don't want me as your defense expert," Evid. Hr. Tr. 8/8/13 at 15, but referred him to at least one other expert who he described as the "best defense expert in these types of situations." *Id.* at 10.

Even the Court of Appeals acknowledged that trial counsel in this case did not know whether another expert would be able to provide favorable testimony. *Ackley*, *supra* at 4. While "strategic choices made after thorough investigation of law *and facts relevant to plausible options* are virtually unchallengeable," *Strickland*, *supra* at 690-91 (emphasis added), here counsel did no such thorough investigation of the facts. Instead, counsel utterly failed to investigate the "facts relevant to plausible options." *Id.* Further investigation would have led him to an expert such as Dr. Spitz, who directly contradicted the prosecution's theory. Under those circumstances, his decision should be considered reasonable "precisely to the extent that reasonable professional judgments support the limitations on investigation." *Id.* at 691.

B. *Hinton v Alabama* requires a thorough investigation before the selection of an expert.

In *Hinton v Alabama*, the U.S. Supreme Court found counsel's performance deficient with respect to his failure to obtain an adequate expert. In doing so, the court recognized the risk of wrongful convictions based on faulty forensic science and that, "**this threat is minimized when the defense retains a competent expert to counter the testimony of the prosecution's expert witnesses**." *Hinton, supra* at 1090 (emphasis added).

Specifically, a unanimous court held that a "trial attorney's failure to request additional funding in order to replace an expert he knew to be inadequate because he mistakenly believed that he had received all he could get under Alabama law constituted deficient performance." *Id.* at 1088. Thus, in *Hinton*, counsel's inappropriate choice of experts stemmed from his mistake of law. But counsel can also be ineffective in his choice of experts if that choice is based on an incomplete investigation of the facts: "selection of an expert witness is a paradigmatic example of the type of strategic choic[e] that, when made after *thorough investigation of [the] law and facts*, is virtually unchallengeable." *Id.* at 1089 (emphasis added), Thus, *Hinton* counsels that an attorney must conduct a thorough investigation of both the law *and the facts* before he chooses an expert.

This case does not require this Court to weigh "the relative qualifications of experts hired and experts that might have been hired." *See id.* at 1089. The question is not whether any particular doctor was more qualified than the other; the question is whether counsel performed a "thorough investigation of the . . . facts" before choosing between an expert who could support his theory, and one who could not.

The prosecution misinterprets the lessons of *Hinton*. *See* Prosecution's Supplemental Brief at 6-9 (arguing that *Hinton* stands for the proposition that courts cannot evaluate counsel's choice of experts unless it was based on a mistake of law). True, the specific deficiency in *Hinton* began with a mistake of law. But that does not mean that unless there was a mistake of law, there is never deficient performance in the choice of an expert. *Strickland* made clear long ago that "counsel has a duty to make reasonable investigations or to make a reasonable decision that makes particular investigations unnecessary." *Strickland*, *supra* at 691. That duty applies whether that investigation relates

to the choice of an experts or something else.[39] Nothing in *Hinton* changes that. *See Hinton, supra* at 1087 (noting that the court is not creating new law, but simply engaging in a "straightforward application of [past] ineffective-assistance-of-counsel precedents, beginning with *Strickland v. Washington*.").

Perhaps the most important lesson from *Hinton* is the broader lesson about the dangers of faulty forensic testimony, and trial counsel's role in curbing that danger. *Hinton, supra* at 1089 ("Prosecution experts, of course, can sometimes make mistakes. Indeed, we have recognized the threat to fair criminal trials posed by the potential for incompetent or fraudulent prosecution forensics experts . . . [s]erious deficiencies have been found in the forensic evidence used in criminal trials") (internal quotations omitted). This Court should heed those warnings and emphasize that a robust investigation by trial counsel is not only required under the law, but necessary to curb the very real threat of wrongful convictions based on the unsupportable and untested opinions of prosecution experts.

IV. With the Assistance of an Appropriate Expert, Trial Counsel Could Have Recognized and Effectively Rebutted the SBS/AHT Testimony In this Case.

Much of the testimony of the state's experts in this case was simply wrong on multiple levels. If defense counsel had presented expert testimony, he would have been able to prove this. Instead, the jury was left with only the unrebutted testimony of the

[39] The prosecution states that a trial attorney is not required to "continue shopping for experts" after receiving an unfavorable opinion. Prosecution's supplemental brief at 4. Among other cases, the prosecution cites *People v Eliason*, 300 Mich App 293; 833 NW2d 357 (2014), in support of this proposition. It is noteworthy that in that case trial counsel contacted three experts, all of whom provided unfavorable opinions. The Michigan Court of Appeals found that this was not deficient performance because "trial counsel thoroughly examined options regarding the use of expert witnesses." *Id.* at 300. Surely counsel is not constitutionally required to "continue shopping for experts" until he finds a favorable opinion, but he *is* required to conduct a thorough investigation, particularly where the expert he does consult refers him to others who may have a different opinion that will support his defense.

state's five experts.

A. The state's experts in this case gave incorrect and unsupportable testimony, which could have been rebutted by an expert.

1. Experts testified that the effects of Baylee's alleged head trauma would have been immediate. This is false.

Medical and scientific literature overwhelmingly supports the existence of what is often called a "lucid interval," a widely varying time between injury and collapse, despite Dr. Guertin's testimony at trial in this case. *See, e.g.,* TT at 440-41. This phenomenon is well-documented, and although symptoms vary between individuals,[40] it cannot be categorically stated that a child would be immediately comatose after a closed head injury. Lucid intervals indisputably exist, and can be short or lengthy. There does not appear to be any scientific evidence to support Dr. Guertin's contention that lucid intervals do not occur in children Baylee's age. Some studies show intervals of 72 hours or more between injury and symptoms in cases that were serious enough to result in death.[41] Often, symptoms of head injury are subtle, and may be invisible or appear benign, especially to a caregiver who is not a medical professional. Even caregivers who are closely watching for symptoms of brain injury following a fall may not see them.[42]

In fact, the signs and symptoms of brain injury can be so subtle that children with

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[40] Symptoms range in severity and children with head injuries fall on a spectrum; some may appear to have no symptoms at all, others may be immediately comatose, and many more will display a range of symptoms, such as lethargy, nausea, clinginess, fussiness, and so on.

[41] Gilliland, *Interval Duration Between Injury and Severe Symptoms in Nonaccidental Head Trauma in Infants and Young Children*, 43 J. Forensic Sci. 723 (1998).

[42] Denton, *Delayed Sudden Death in an Infant Following an Accidental Fall*, 24. Am. J. Forensic Med. Pathol. 371 (2003).

them present as lucid even to experienced health care providers.[43] In one notable case, an injured child was under medical supervision for over 12 hours following her head injury but before her collapse, during which time she was evaluated and treated by physicians, none of whom recognized the seriousness of her situation.[44] During this time, she was described as "fussy," and "clingy," but was awake and interactive; none of her doctors or nurses recognized her grave head injury.[45] While it may be true that some children, after a serious head injury, are immediately or quickly limp and unresponsive, it cannot be categorically stated that this is true in all or even most instances. The literature cited above shows that children have varying responses to head injury and those responses occur at varying times. It is simply wrong to claim that because some children experience a rapid onset of serious, obvious symptoms, *all* children *must* be immediately or almost immediately unconscious. The statement is not only inconsistent with existing research, but contradicts best medical practices with respect to childhood head injury.[46]

2. Experts testified that a fall could not have caused Baylee's injuries. This is false.

Injuries like Baylee's have been seen in children who suffer accidental falls, including falls from short distances.[47] In one study, researchers performed a

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[43] Arbogast et al., *Initial Neurologic Presentation in Young Children Sustaining Inflicted and Unintentional Fatal Head Injuries*, 116 Pediatrics 180, 184 (2005).
[44] Huntington, *Symptoms Following Head Injury*, Letter to the Editor, 23 Am. J. Forensic Med. Pathol. 105 (2002).
[45] *Id.*
[46] *See, e.g.* The University of Michigan Health System information sheet on mild traumatic brain injury, available at http://www.med.umich.edu/1libr/PM&R/MTBI.pdf (recommending that children who have suffered a head injury—even a mild one—be supervised by a responsible adult for 48-72 hours and noting that symptoms may worsen).
[47] *See, e.g.,* Plunkett, *Fatal Pediatric Head Injuries Caused by Short-Distance Falls*, 22 Am. J. of Forensic Med. & Pathology 1 (2001), Lantz et al., *Fatal acute intracranial injury, subdural hematoma, and retinal hemorrhages caused by stairway fall*, 56 J. of Forens. Sci. 1648

biomechanical recreation of a videotaped fatal fall, and confirmed that the force attendant to such a fall was sufficient to cause subdural hematoma, retinal hemorrhage and cerebral edema.[48] The dangers of short distance falls have since been confirmed by other physicians and scientists.[49] Devastating injuries to the brain have been reported with accidental falls of all kinds, from the very mild (such as household falls or falls from furniture) to the indisputably severe (motor vehicle accidents, for example).[50] The presence or purported severity of brain injuries cannot serve to indicate the type or degree of force that created them.[51] Accidental falls have the potential to cause subdural and retinal hemorrhages and to trigger brain swelling, leading to death. No one knows exactly why some falls have fatal consequences, but they sometimes clearly do—and when they do, the medical findings can look just like the injuries sustained by Baylee.

3. Experts testified that Baylee's retinal hemorrhages could not have been caused by an accident. This is false.

Experts testified that Baylee's retinal hemorrhages were not the result of an accident fall. *See e.g.*, TT at 669-70. However, the only conclusion to be drawn from a review of the literature is that retinal hemorrhages can appear in severe head injury, **whatever its cause**.[52] For example, one study reported an infant who died and presented

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(2011), Steinbok et al., *Early hypodensity on computed tomographic scan of the brain in an accidental pediatric head injury*, 60 Neurosurgery 689 (2007).

[48] *See* Van Ee et al., *Child ATD Reconstruction of a Fatal Pediatric Fall*, Proc. ASME (2009).

[49] *See, e.g.*, Steinbok et al., *Early hypodensity on computed tomographic scan of the brain in an accidental pediatric head injury*, 60 Neurosurgery 689 (2007).

[50] *Id.*

[51] *Id.*

[52] *See, e.g.*, Watts & Obi, *Retinal folds and retinoschisis in accidental and non-accidental head injury*, Eye Advance [online publication], July 18, 2008 (comparing two case studies, one accidental and one non-accidental, with very similar ophthalmic findings); Bechtel et al., *Characteristics That Distinguish Accidental From Abusive Injury in Hospitalized Young Children with Head Trauma*, 114 Pediatrics 165, 165-68 (2004); Levin, A, *Retinal*

with retinal hemorrhages and retinal folds after another child tripped and fell on top of the infant—again debunking both the myth that only abuse could cause such eye injuries and the myth that only rapid acceleration/deceleration forces can cause such eye injuries.[53] In yet another case, a ten-week-old child suffered a skull fracture with subdural and subarachnoid hemorrhages, as well as retinal hemorrhages of a type previously ascribed exclusively to abuse, along with retinal folds, when his mother, who was carrying him in a front-holding papoose, tripped and crushed his head between her chest and a wooden barrier.[54] In 2010, Dr. Evan Matshes reported that retinal hemorrhages are commonly found in natural and accidental deaths, as well as in homicides, and identified a statistically significant relationship between retinal and optic nerve sheath hemorrhage and the restoring of cardiac rhythm following advanced life support and cerebral edema, regardless of etiology.[55] In other words, where there is hypoxia (lack of oxygen), increased intracranial pressure, and prolonged resuscitation efforts, retinal hemorrhages of all kinds follow. Such hemorrhages are neither diagnostic of nor caused directly by abuse. The study concluded that eye evaluations are of "limited value" in child death investigations.[56] Other studies have similarly indicated that retinal hemorrhages do not assist in distinguishing

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Hemorrhage in Abusive Head Trauma, 126 Pediatrics 961, 961-70 (2010); Longmuir et al., *Retinal hemorrhages in intubated pediatric intensive care patients*, 18 J. Of AAPOS 129, 129-33 (2014) (of the 85 eye examination conducted of intubated children in hospital, 7% were positive for retinal hemorrhages); Binenbaum et al., *An Animal Study to Retinal Hemorrhages in Nonimpact Brain Injury*, 11 J. OF AAPOS 84, 84-85 (2007); Leuder et al., *Perimacular Retinal Folds Simulating Nonaccidental Injury in an Infant,* 124 Archives Ophthalmology 1782 (2006).

[53] Leuder et al., *supra* n. 52.

[54] Watts & Obi, *supra* n. 52.

[55] Matshes, *Retinal and Optic Nerve Sheath Hemorrhages Are Not Pathognomonic of Abusive Head Injury*, 16 Proc. of the Am. Academy Forensic Sci. 272 (2010).

[56] *Id.*

between accidental and abusive head injuries.[57]

The *Bailey* court in New York found that the trial testimony on retinal hemorrhages, like the testimony offered in this case, is no longer supported by the scientific literature, and acceleration-deceleration forces are no longer thought to be the only cause of retinal hemorrhaging. *See Bailey*, *supra* at 18, 23-24. A federal district judge recently came to the same conclusion in *Del Prete v Hulett*, 10 F Supp 3d 907, No. 10 C 5070, 2014 WL 296094 (ND Ill Jan. 27, 2014) after considering the post-conviction testimony by prosecution and defense witnesses that retinal hemorrhages have causes other than abuse and cannot time an injury with specificity. *See id* at 930-1, 932, n. 8.

> Given these consistent research findings, the testimony of the prosecution experts that they could distinguish between accidental and abusive head injury based on the presence of retinal hemorrhages was false.

Dr. DeJong testified, unequivocally, that Baylee's injuries could not have resulted from a fall. TT at 670-71. This is false. Injuries like Baylee's have been reported after witnessed and videotaped short distance falls.[58]

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[57] *See e.g.,* Uscinski, *Shaken Baby Syndrome: Fundamental Questions*, 16 British J. of Neurosurgery 217 (2002) (suggesting that impact from a short distance fall can damage the brain stem respiratory center, causing hypoxia, swelling and an abrupt rise in intracranial pressure, leading to retinal hemorrhage); Plunkett, *Fatal Pediatric Head Injuries Caused by Short-Distance Falls*, 22 Am. J. of Forensic Med. & Pathology 1 (2001) (out of the six children who died from short distance falls, four of the six who had a postmortem eye examination – a full 66% had bilateral retinal hemorrhage, including the toddler whose fall was similar to Olivia's); Aoki & Masuzawa, *Infantile acute subdural hematoma: Clinical analysis of 26 cases*, 61 J. of Neurosurgery 273 (1984) (short distance accidental falls from sitting or standing positions associated with acute subdural hemorrhage and retinal hemorrhage in 26 infants).

[58] Researchers differ about what constitutes a "short" fall, but in this document we use the term to refer to an accidental fall in the course of normal childhood activities. Short falls in medical research often include falls from furniture, playground equipment, toys, kitchen counters, and so on.

4. Experts testified that Baylee's injuries had to have been caused by "violence." This is false.

There is nothing about Baylee's head injuries that show they must have been caused by violence. *See e.g.*, TT at 671 (Dr. DeJong testifying that the force applied must have been "violent"). As discussed above, there are many causes of the medical findings in this case. Thus, the injuries themselves cannot show violence.

B. Expert testimony could have supported the defense theory that Baylee died from an accidental fall.

Experts are available to give opinions about the potential of death from falls that would have undoubtedly been helpful to Mr. Ackley in this case. Mr. Ackley's trial counsel was provided with names of potential experts. He did not contact them. At the post-conviction hearing, a forensic pathologist testified in support of the theory that Baylee's death was accidental.

Further, there is no evidence that trial counsel consulted with any of the additional types of experts who could have also provided helpful testimony, such as biomechanical experts. These experts are qualified to testify about the forces attendant to accidents, including falls. They regularly examine precisely this sort of question. Biomechanics is an important and well-recognized field of study that improves the safety of playground equipment, sports helmets, and automobiles, to name only a few. Courts in other jurisdictions have held that biomechanical engineer experts provide testimony that is distinct from what medical doctors provide. See *Council v. State*, 98 So. 3d 115, 117 (FL 1st DCA 2012).

V. Courts Have Rejected or Discounted the Type of Testimony Presented in Mr. Ackley's Case and Have Overturned Similar Convictions Based on Both Ineffective Assistance and Scientific Progress.

Courts have held that the hypothesis put forth by the prosecution—that children with certain constellations of medical findings must have been abused and could not have sustained their injuries accidentally—cannot support a criminal conviction. When this hypothesis is scrutinized against the volumes of accepted scientific and medical literature showing that medical findings like Baylee's have a wide variety of innocent, non-abusive causes, courts overturn the convictions and, in some cases, find that the defendant meets standards for proving innocence. There are numerous such examples—several are discussed in detail below.[59]

Julie Baumer

Another Michigan case bears a striking resemblance to this one. In 2009, a Macomb County Circuit Court reversed Julie Baumer's conviction for first-degree child abuse, finding that "trial counsel was ineffective for failing to retain experts to challenge plaintiff's

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[59] For additional examples *see People v Bailey*, Case No. 2001-0490 (Monroe County Ct, NY, Dec. 16, 2014), attached as Appendix A; *Ex parte Henderson*, 384 S.W.3d 833, 833-34 (Tex Crim App 2012).

Examples exist abroad as well. In October 2014 the Supreme Court of Sweden heard a case much like those discussed above, and issued a decision, *MM v Prosecutor-General*, Case No. B 3438-12 (Supreme Court of Sweden, June 25, 2009), reversing a conviction and acquitting the defendant on the basis that new doubts about the medical science meant that the Abusive Head Trauma conviction was not supported by proof beyond a reasonable doubt. That decision, which has just now been translated into English, is attached as Appendix C.

The Court concluded that, generally, the scientific evidence for the diagnosis of abuse based on the presence of certain intracranial findings is now uncertain. *Id.* at 10, ¶ 21. Accordingly, the Court held, "The conclusion is that it has not been shown beyond reasonable doubt that MM caused the injuries stated by the Prosecutor-General to [the child]. MM shall therefore be acquitted." *Id.* at 10 (directing an acquittal instead of reversal for a new trial).

experts." *People v Baumer*, Case No. 2004-2096-FH (Macomb County Cir Ct, Nov. 30, 2009); Attached as Appendix B. At trial, the prosecution argued that Baumer had abused her nephew, Phillip, causing severe brain injuries and a skull fracture. The prosecution's experts testified that the brain injuries had been caused by shaking, and the skull fracture by intentionally inflicted blunt force trauma. *Id.* at 7. Much of this testimony relied on interpretations of CT and MRI scans. *Id.* At a subsequent post-conviction hearing trial counsel testified "he was fully aware that an expert radiologist was necessary to contest plaintiff's expert radiologist's findings of nonaccidental trauma." *Id.* at 8. Nevertheless, trial counsel only presented the testimony of a pediatric forensic pathologist, "who simply testified that she disagreed with the interpretation of the CT scans and MRIs, but that she was not qualified to provide an expert alternative interpretation." *Id.*

During postconviction proceedings Baumer "submitted substantial evidence that experts were available at the time of trial to challenge the testimony of plaintiff's experts" and to establish an alternate explanation for Phillip's injuries. *Id.* [60]Accordingly, the trial court found that defense counsel performed deficiently and, because that deficient performance "deprived defendant of a substantial defense," that Baumer suffered actual prejudice. *Id.* at 9.

Jennifer Del Prete

In the case of Jennifer Del Prete, federal district Judge Matthew Kennelly held that new evidence of the changing science regarding Abusive Head Trauma made it likely that no reasonable jury would find Del Prete guilty beyond a reasonable doubt. *Del Prete v Thompson*, 10 F Supp 3d 907 (ND Ill 2014). In determining whether Del Prete had met her

burden, the reviewing court needed to consider all the evidence, including relevant evidence that was excluded or unavailable at trial. *See Schlup v Delo*, 513 US 298, 115 S Ct 851, 853, 130 L Ed 2d 808 (1995).

Del Prete was babysitting for a child who collapsed while in her care in 2002 and later died. Doctors at her trial in 2005 testified that because she was the only adult with the child at the time the child collapsed, she must have caused the child's injuries. They testified that the child's subdural hematoma, retinal hemorrhages, and cerebral edema pointed to one cause—abuse—and that the child had suffered abusive head trauma immediately prior to her collapse. *Del Prete*, *supra* at 916. They testified that in the absence of a report of major trauma, like a car crash, "you have to assume that it was a child abuse or baby shaking." *Id* at 913. Their testimony reflected now-outdated beliefs about Abusive Head Trauma/Shaken Baby Syndrome.

At Del Prete's federal post-conviction evidentiary hearing in 2013, the testimony was significantly different. Witnesses for the State conceded that retinal hemorrhages are not only caused by acceleration-deceleration forces (*Id.* at 932), that the mechanism of retinal hemorrhage is unknown (*Id.*), that medicine has not established a causative relationship between abusive head trauma and retinal hemorrhages (*Id.*), that the child had subdural hematomas that were chronic (old) at the time of her collapse (*Id.* at 955), and that collapse or loss of consciousness does not always immediately follow a serious head injury (*Id.* at 938). These same witnesses, testifying for the prosecution, had to concede that there were innocent, non-abusive explanations for similar medical findings and that witnesses at trial were incorrect when they testified otherwise. Witnesses for the defense provided copious evidence that suggested that the findings could be caused by any number

of accidents, diseases or other non-abusive scenarios.

The court found that the evidence offered by Del Prete's experts pointed to a cause of death "unrelated to any abuse by anyone," which reinforced "the Court's determination that no reasonable juror who heard all of the evidence could find Del Prete guilty of murder beyond a reasonable doubt." *Id.* at 957. The court described claims of Shaken Baby Syndrome/Abusive Head Trauma as arguably "more an article of faith than a proposition of science." *Id.* at n. 10.

Audrey Edmunds

In 1995, Audrey Edmunds was charged with first-degree reckless homicide when a 7-month-old died while in her care. At trial, the State presented a number of medical expert witnesses who testified to "a reasonable degree of medical certainty" that the child's death was caused by violent shaking, or a combination of shaking and impact. *State v Edmunds*, 308 Wis2d 374, 746 NW2d 590, 592 (Wis Ct App 2008). At trial, the issues included whether the child's death was caused by inflicted trauma, and if so, whether the injury had to have been sustained while the child was in the Edmunds' care. During the eleven years Edmunds served in prison, new scientific findings came to light suggesting that natural and accidental causes could have been the cause of death, and that children can experience lucid intervals of 72 hours or more after injury before exhibiting signs of illness, so the injuries could not be timed to the period when the child was in Edmunds' day care. The pathologist who testified both to the cause of death and the near impossibility of a lucid interval at trial changed his original opinion, testifying at the post-conviction hearings that he no longer could say either that the child was murdered or that Edmunds was responsible.

In light of the new evidence that undermined what was presented at trial, the Wisconsin Court of Appeals reversed Edmunds's conviction in 2008 and granted her a new trial, citing "a shift in mainstream medical opinion since the time of [her] trial." *Id.* at 599. The prosecution subsequently dismissed all charges.[61]

Shirley Ree Smith

The Supreme Court of the United States has considered these issues as well. *See Cavazos v Smith*, 132 S Ct 2, 7; 181 L Ed 2d 311 (2011). Though Smith's conviction was upheld on procedural grounds, the Court wrote in the majority opinion, "[d]oubts about whether Smith is in fact guilty are understandable." *Id.* at 7. The Court suggested executive clemency might be the proper route for relief, which Smith pursued and was granted. The dissent focused on doubts about Smith's guilt and lack of scientific or circumstantial support for the conviction. The dissent examined the considerable scientific evidence that accumulated between the date of conviction and their consideration of the case, and concluded, "[w]hat is now known about SBS hypotheses seems to be worthy of considerable weight in the discretionary decision whether to take up this tragic case." *Id.* at 11.

CONCLUSION

There is a great danger of wrongful conviction when unsupported medical diagnoses are used as a basis for a criminal prosecution. Expert opinions that abuse is the only or most likely cause of subdural hemorrhage, retinal hemorrhage, and encephalopathy, that those findings can be accurately timed, and that those findings can

[61] *See* Bazelon, *Shaken-Baby Syndrome Faces New Questions in Court*, N.Y. TIMES (February 2, 2011), available at <http://www.nytimes.com/2011/02/06/magazine/06baby-t.html?pagewanted=all&_r=0>.

only be manifested after an episode of violence, are not supported by science or medicine. This is particularly true in a case like this one, where alternative explanations exist. When counsel fails to perform an adequate investigation, wrongful conviction is a likely result.

Respectfully Submitted,

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